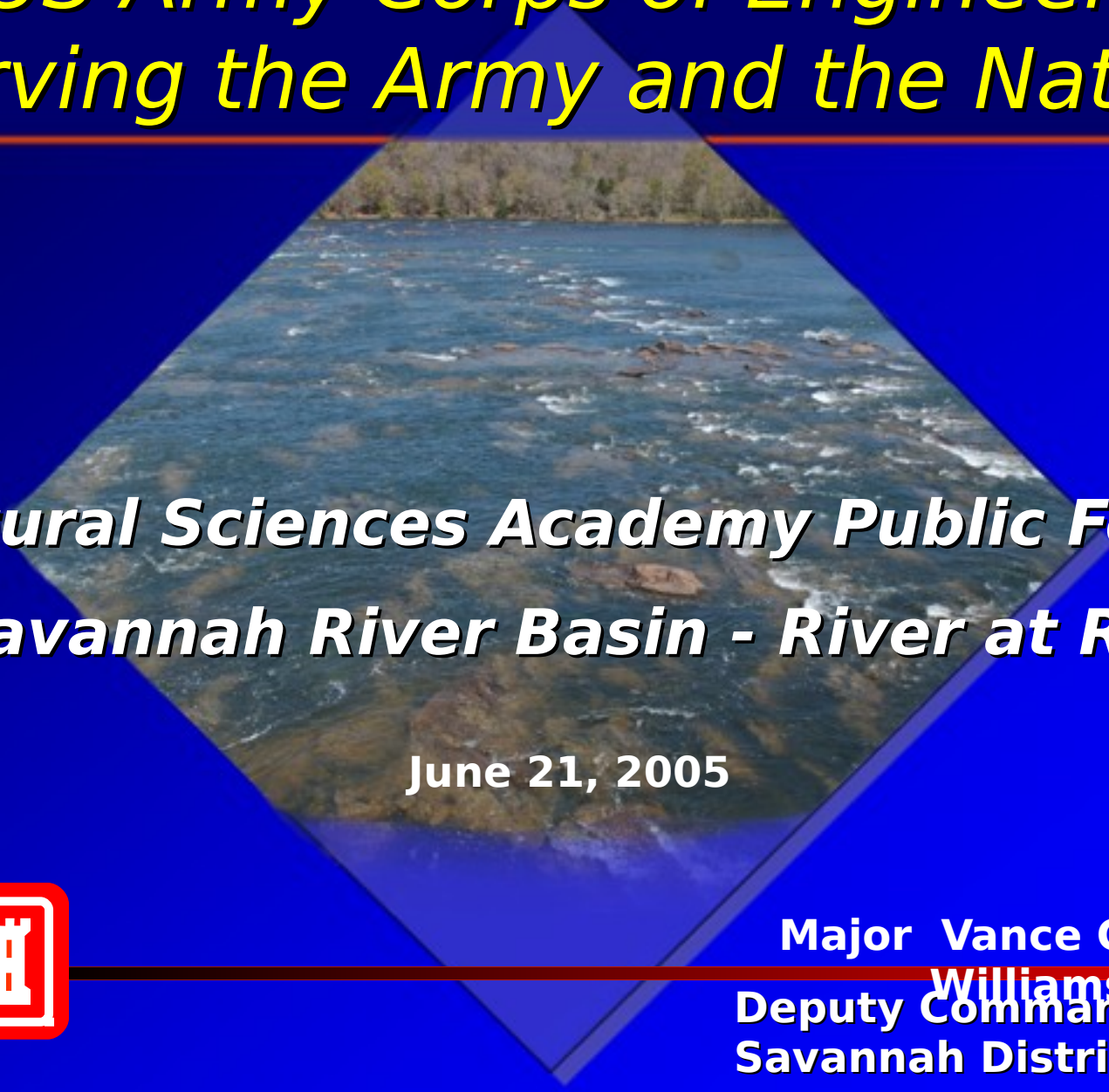
US Army Corps of Engineers
Serving the Army and the Nation



Natural Sciences Academy Public Forum

Savannah River Basin - River at Risk

June 21, 2005

Major Vance C. Williams
Deputy Commander,
Savannah District

Agenda

- Who We Are – Savannah District
- Balancing River Basin Uses
- Corps' Role and Responsibilities
- Water Supply Policy
- Comprehensive Water Resources Study
- Milestones
- Corps' Future Role
- Questions

Who We Are…

The Savannah District

Our Greatest Asset:Our People

- Diverse
- Almost 1,000 Strong
- Multi-Disciplined
- Customer Oriented

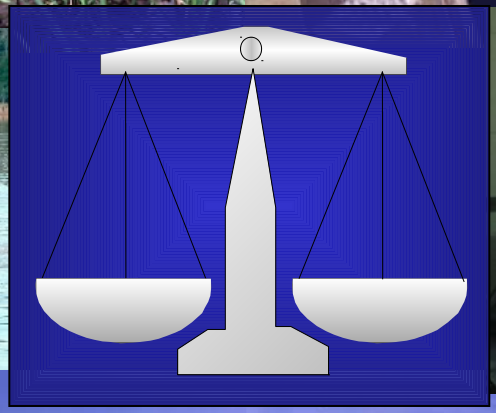
US Army Corps of Engineers
Savannah District
US Army Corps of Engineers
US Army Corps of Engineers
US Army Corps of Engineers

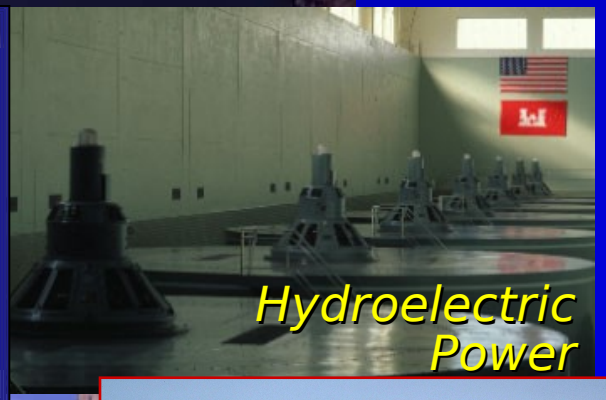
Savannah District Boundaries

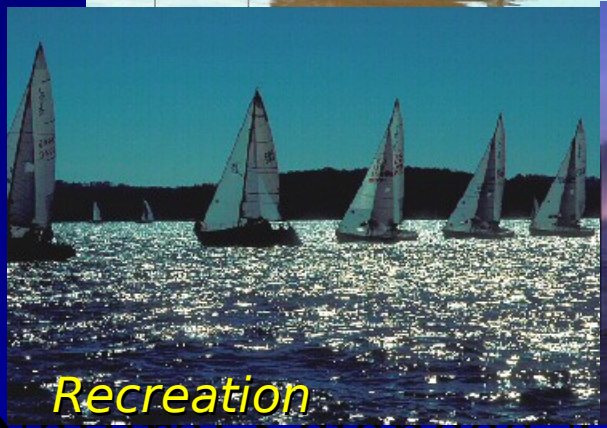
Environmental Operating Principles

- **B** - Build and Share Knowledge
- **A** - Accept Corporate Responsibility
- **L** - Listen to and Learn from Stakeholders
- **A** - Assess and Mitigate Impacts
- **N** - Negotiate Economic and Environmental Solutions
- **C** - Consider the Consequences
- **E** - Encourage Environmental Sustainability

Savannah River Basin Balancing Uses







US Army Corps of Engineers Role and Responsibilities

- **Manage and operate 3 multi-purpose projects in accordance with authorized project purposes**
- **Flood control and water supply take precedence over all other project purposes and uses**
- **During normal operations balance the needs of water users**

Corps Water Supply Policy

- **States and local sponsors have primary responsibility**
- **Federal policy emphasis shift to watershed approach**
- **Assigns financial costs to the users**

Corps Water Supply Policy

- **What the Corps can do**
  - **Build water supply storage**
  - **Reallocate storage**
  - **Add storage**
  - **Provide expert assistance in water management**
  - **Exercise regulatory review**
  - **Manage the storage and release of water**

Savannah River Basin Comprehensive Water Resources Study

Pertinent Basin Data

Over 500 Major Users

312 River Miles

1 Lock and Dam

44 GA, SC, NC Counties

14 Hydropower Plants

3 USACE Dams

Corps of Engineers, Georgia DNR, South Carolina DNR

Corps Facilities Users

- **Lakes Region**
  - **JST- 1,650 lake permits**
  - **Hartwell – 10,734 lake permits**
  - **3 Lake Total – 17.5 million visitors in 2004**
  - **3 Lake Total Water Supply Users**
    - **13 municipalities**
    - **1 state park**
    - **1 university**
    - **5 industries**
  - **20 hydropower units – 1,434 MW capacity**

    (Corps owned)

Hartwell Lake

- 3rd most-visited Corps project in Nation - 10.1M Visitors
- Constructed in 1962
- 56,000 acre water surface (660 msl)
- 962-mile shoreline
- 5 turbines capable of generating 422 MW
- FY 04 hydropower revenue returned to Federal Treasury - $18.1M
- Largest shoreline management program in the Corps with 47,523 permitted activities

Richard B. Russell Project

- Largest Corps power plant east of Mississippi River – 540 miles of shoreline
- Constructed in 1978 – 1984/5
- 26,653 acre water surface (475 ft msl)
- FY 04 hydropower revenue - $23.9M
- Four conventional turbines capable of 328 MW
- Four pump turbines capable of 320 MW
- 27 recreation sites
- 4 state parks

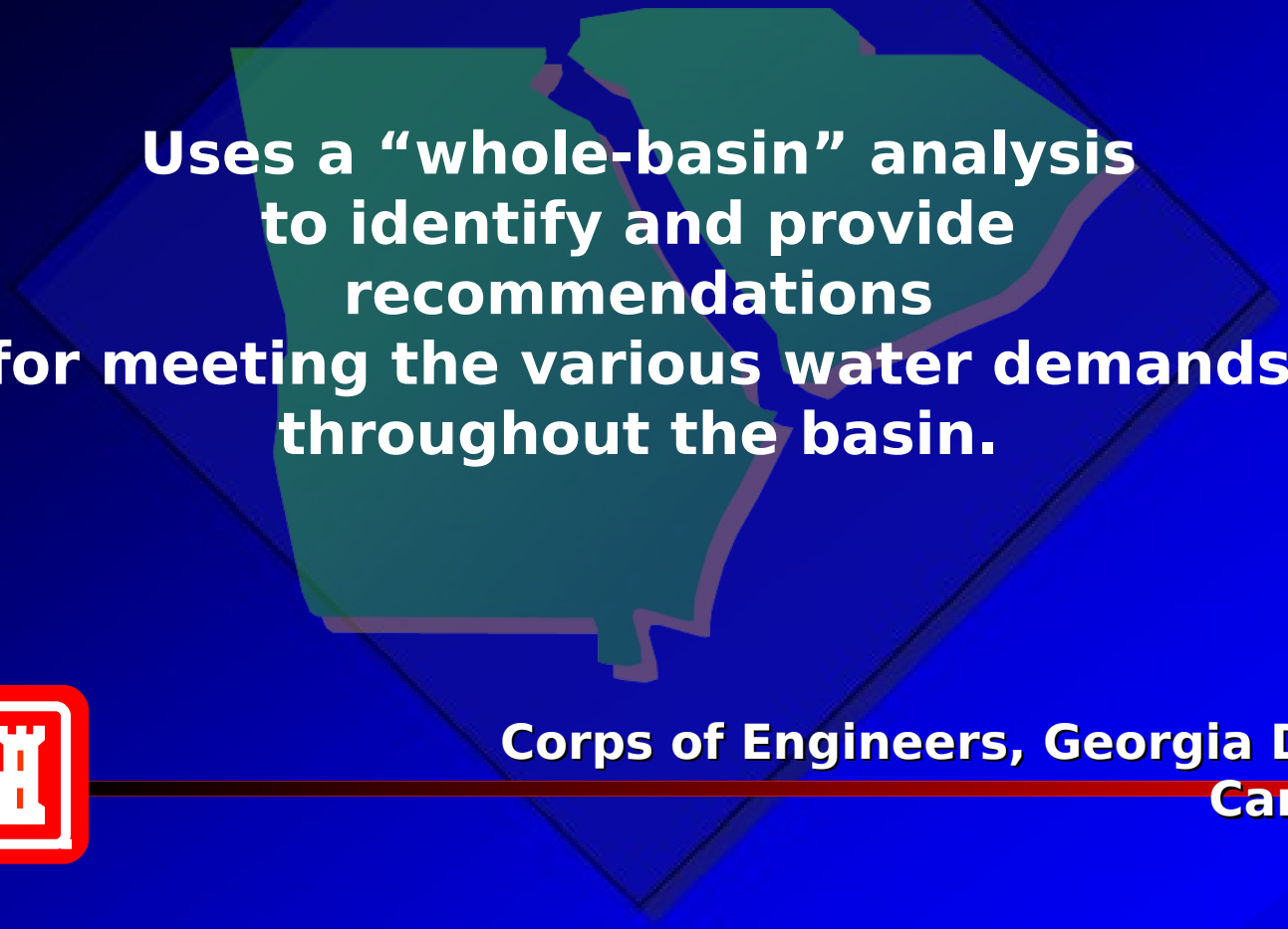
J. Strom Thurmond Project

- 8th most-visited Corps project in the Nation
  - 6M Visitors Annually!!!
- Constructed in 1952
- 71,100 acre water surface (330 ft msl)
- Seven turbines capable of generating 364 MW
- FY 04 hydropower revenue - $16.6M
- 1,200 miles of shoreline (greater than coast of California)
- 76 recreation sites

Savannah River Basin Users

- **River Below JST**
  - **Water Supply Users**
    - **3 cities * 2 counties**
    - **1 Army installation * 12 industries (direct withdrawal)**
  - **Heavy Recreational Use**
  - **Augusta Shoals (endangered species)**
  - **Coastal Zone Environmental Concerns**
    - **Salt water intrusion**
    - **Savannah River Fish & Wildlife Refuge**

Savannah River Basin Comprehensive Water Resources Study



Uses a “whole-basin” analysis to identify and provide recommendations for meeting the various water demands throughout the basin.

Corps of Engineers, Georgia DNR, South Carolina DNR

Savannah River Basin Comp Study

Major areas identified for analysis

- **Water supply allocations**
- **Flood control**
- **Drought management**
- **Hydropower generation**
- **Water quality and flow**
- **Fish and wildlife**
- **Aquatic plant control**
- **Recreation**

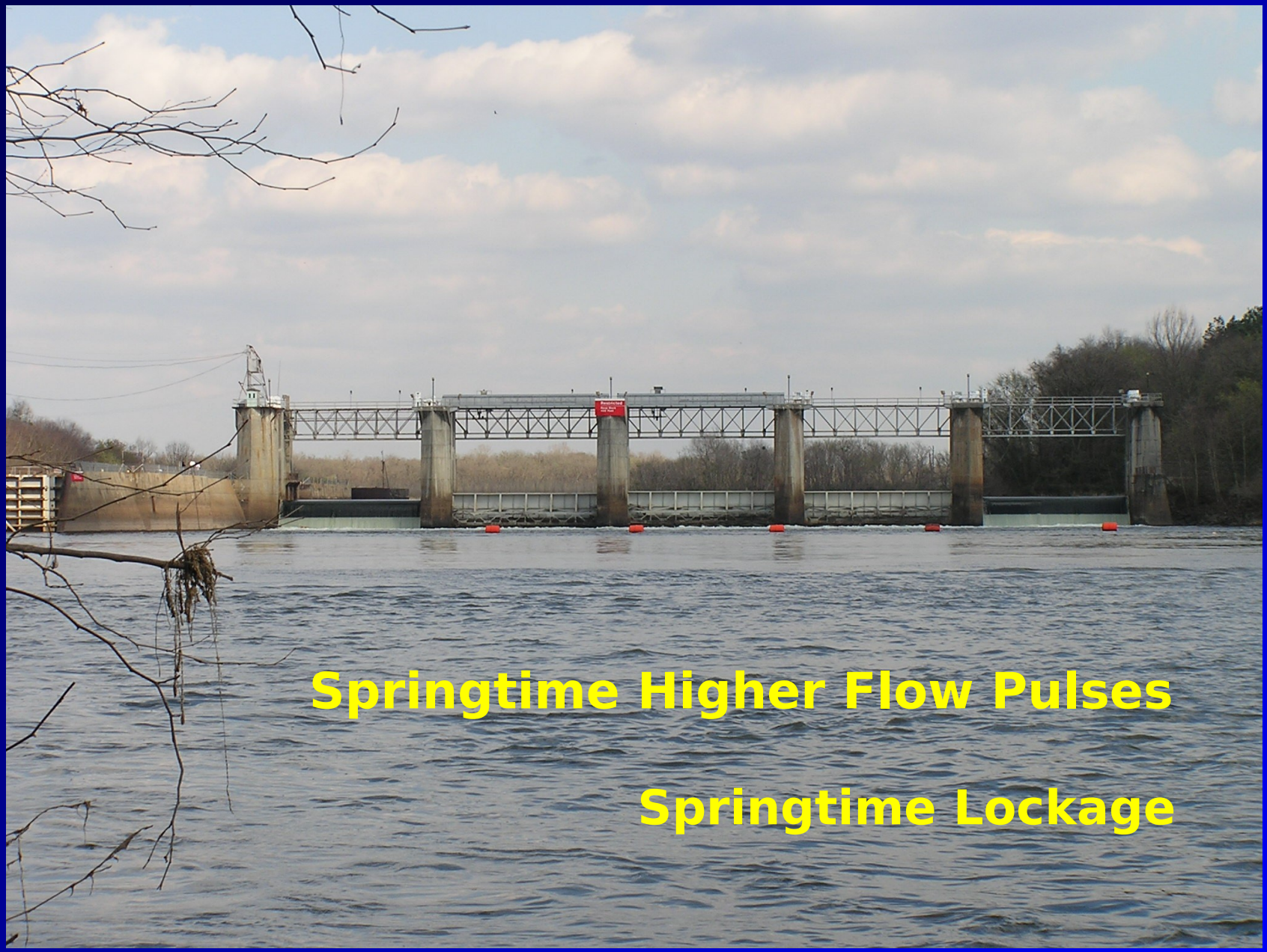
Savannah River Basin Comp Study
Operational Scenarios

- **Drought Plan**
- **Storage Changes**
- **Flow Changes**
- **Operational Rule Changes**

The Nature Conservancy Sustainable Rivers Project

- **USACE & TNC Partnership**
  - **Initiated summer 2002**
  - **Working to improve operations to protect and enhance the natural river environment while meeting other project purposes and needs**
  - **14 sites, 10 rivers, 11 states**
  - **The Nature Conservancy in concert w/the scientific community developed**

NSBL&D - Fish Passage



Fish Passage

- **NSBL&D Lockage**
  - **Lease w/City of Augusta**
  - **Requires 30 – 50 lockage events**
  - **Late March into mid-May**
  - **Facilitates upstream fish migration and spawning**
  - **Opens up an additional 18 miles of river above the NSBL&D to Augusta Shoals**

Fish Passage

- **Higher Flow Pulses**
  - Two pulses in March - May
  - Conducted on March 16-18 and 23-25
  - 23,000 cfs daily average at NSBL&D
  - Source: winter flood storage at Hartwell and JST Lakes
  - Flood conditions this spring = Flows greater than 25,000 cfs

Drought Plan Operations

- **Objective- To assess the impacts of lake levels, storage and flow releases based on different drought rules, triggers, and their timing**
- **New Drought of Record (1998-2003) was used for analysis**

Savannah River Basin Comp Study (Drought)

- **Basin Stakeholders Meeting – 3/4/2005**
  - **4 workshop groups:**
    - **Hydro**
    - **Recreation and homeowners**
    - **Environmental (lakes & river)**
    - **Water supply and water quality**
  - **What drought alternatives are most important**
  - **What combinations will be best**

Savannah River Drought Plan

- **Developed by Army Corps of Engineers and states of GA and SC in 1989**
- **Reduces discharges at pre-defined triggers**
  - **Level 1 – Public water safety alerts**
  - **Level 2 – Reduce flows to 4500 cfs**
  - **Level 3 – Reduce flows to 3600 cfs**
  - **Level 4 – JST releases = inflows**

Drought Triggers

- **Current**
  - **Level 1 - No Restriction**
  - **Level 2 - 4500 cfs**
  - **Level 3 - 3600 cfs**
  - **Level 4 - Outflow = Inflow**
- **Proposed**
  - **Level 1 - 4200 cfs**
  - **Level 2 - 4000 cfs**
  - **Level 3 - 3800 cfs**
  - **Level 4 - Outflow = Inflow**

- **Pool Elevations**
  - **Level 1 - JST @ 326’ / Hartwell @ 656’**
  - **Level 2 - JST @ 322’ & 324’ / Hartwell @ 652’ and 654’**
  - **Level 3 - JST @ 316’ / Hartwell @ 646’**
  - **Level 4 - JST @ 312’ / Hartwell @ 625’ / RBR @ 470’**

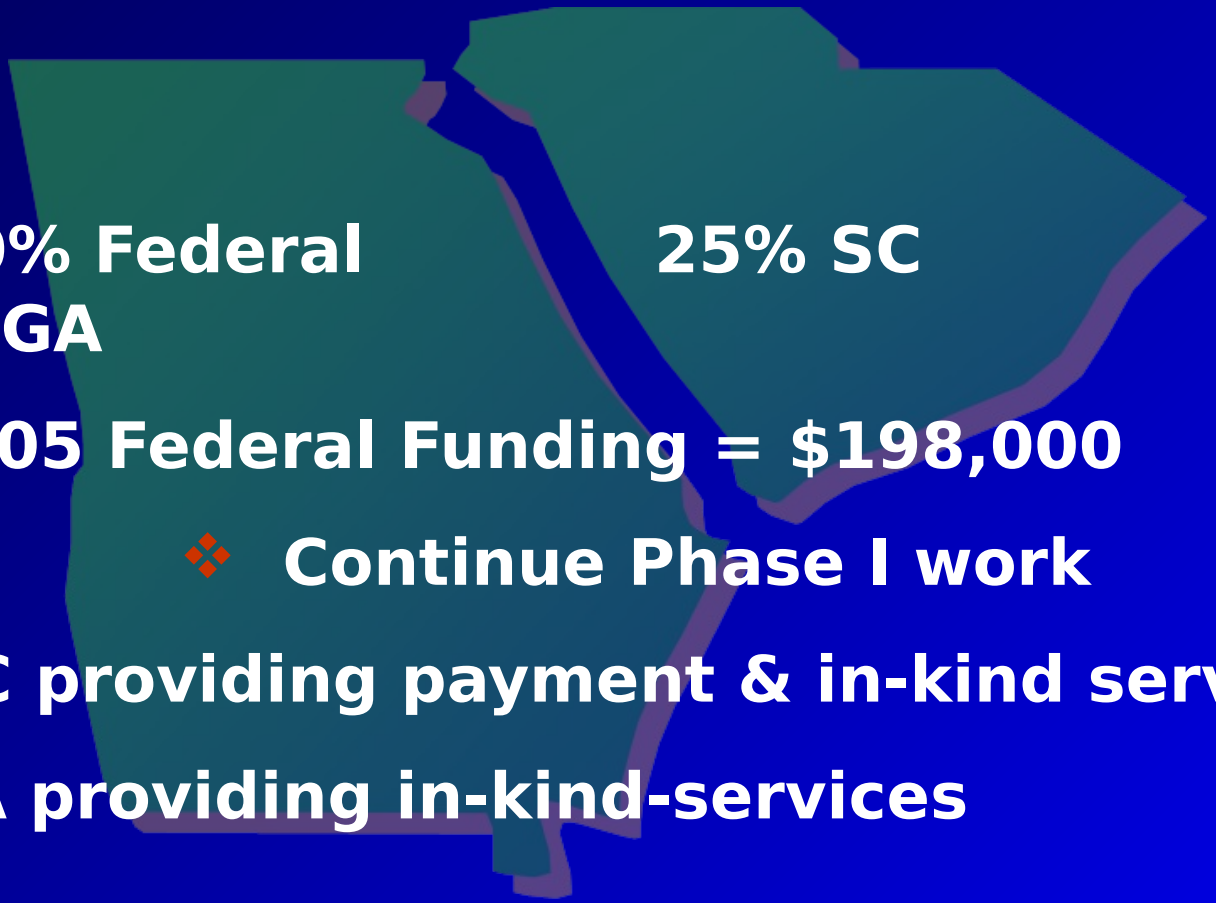
Objectives of Flood Management

- **Minimize damages and loss of life**
- **Use flood storage to store storm inflow peaks**
- **Release flood water after the storm at non-damaging rates**

Milestones FY 05

Task	Completion Date
Finalize combination of alternatives for Drought Management Plan Update	15 April 05
Begin NEPA document preparation for Drought Management Plan Update	15 April 05
NEPA document review	14 July-15 Aug 05
Finalize NEPA document	31 August 05
Complete Drought Management Plan Update	30 September 05

Cost Shared Requirements



- 50% Federal 25% SC
  25% GA
- FY05 Federal Funding = $198,000
  - Continue Phase I work
- SC providing payment & in-kind services
- GA providing in-kind-services

The Corps' Future Role

- **Achieve greater balance between traditional demands and environmental objectives**
- **Restore environmental vitality from degradation of past developments**
- **Address concerns for aging water resources infrastructure**
- **Ensure response capability for natural disasters and terrorism threats to water resources infrastructure**
- **Minimize institutional barriers to effective and efficient water resources planning and management**

Savannah District Web Site

Learn more about us on the web!

www.sas.usace.army.mil

Savannah River Basin Comp Study
Balancing Uses